AF

PATENT APPLICATION
PO-7925
MD-02-52

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| APPLICATION OF | |
| ROBERT L. CLINE ET AL | GROUP NO.: 1761 |
| SERIAL NUMBER: 10/675,536 | EXAMINER: C.D. SAYALA |
| FILED: SEPTEMBER 30, 2003 | |
| TITLE: SLOW RELEASE POLYURETHANE(UREA) ENCAPSULATED FERTILIZER | |

**LETTER**

Mail Stop - Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 2231-1450

Sir:

Enclosed herewith is a copy of an Appeal Brief in the matter of the subject Appeal. Please charge the fee for filing the Brief, $500.00, to our Deposit Account Number 13-3848 .

Respectfully submitted,

By _____
N. Denise Brown
Agent for Appellants
Reg. No. 36,097

Bayer MaterialScience LLC
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-3804
FACSIMILE PHONE NUMBER:
(412) 777-3902
s:\shared\kgb\7925apbrltrDB

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an enveloped addressed to: Commissioner for Patents, Alexandria, VA 22313-1450 8/21/07
Date
N. Denise Brown, Reg. No. 36,097
Name of applicant, assignee or Registered Representative
_____
Signature
August 21, 2007
Date

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## APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Brief is an appeal from the Final Office Action of the Examiner dated March 29, 2007, in which the rejection of Claims 1-5, 7-11, 13-17, 19-23, 25-29 and 31-35 was maintained. A Notice of Appeal was filed on June 26, 2007.

I. REAL PARTY IN INTEREST

This application is assigned to Bayer Polymers LLC. In 2004, Bayer Polymers LLC became Bayer MaterialScience LLC. Thus, Bayer MaterialScience LLC is the real party in interest.

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Date
N. Denise Brown, Reg. No. 36,097
Name of applicant, assignee or Registered Representative
Signature
August 21, 2007
Date

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II. RELATED APPEALS AND INTERFERENCES

There are no pending appeals or interferences which Appellants' are aware of that may be related to, would directly affect, would be affected by or have a bearing on the Board's Decision in this appeal.

III. STATUS OF CLAIMS

The above-referenced application was filed with Claims 1-36. No new claims were added during prosecution. In an amendment filed on January 3, 2007, Appellants cancelled Claims 6, 12, 18, 24, 30 and 36 and incorporated the subject matter of these claims into the respective independent claims on which these claims were dependent. Claims 1-5, 7-11, 13-17, 19-23, 25-29 and 31-35 are pending but stand rejected. Claims 1-5, 7-11, 13-17, 19-23, 25-29 and 31-35 are the subject claims of this appeal.

IV. STATUS OF AMENDMENTS

No amendments were filed by Appellants' after Final Rejection.
It is noted by Appellants that the Advisory Action dated May 31, 2007 which refers to Appellants' response filed on May 9, 2007 states that for purposes of appeal, the proposed amendment will be entered. However, no amendment was presented by Appellants in the May 9, 2007 response. Thus, the Advisory Action is incorrect.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Of the claims on Appeal, Claim 1, 7, 13, 19, 25 and 31 are independent claims. Claims 2-5 are directly or indirectly dependent on Claim 1; Claims 8-11 are dependent, either directly or indirectly, on Claim 7; Claims 14-17 are directly or indirectly dependent on Claim 13; Claims 20-23 are directly or indirectly dependent on Claim 19; Claims 26-29 are dependent, either directly or indirectly, on Claim 25; and Claims 32-35 are dependent, either directly or indirectly, on Claim 31.

Claim 1 is directed to a process for producing polyurethane(urea) encapsulated, slow release fertilizer particles. (See Page 1, Lines 6-7 and Page 3, Lines 23-24.) (In order to assist the Honorable Board in its evaluation of the invention, reference will be made to the specification in which "P" will designate a page number and "L" will designate the line number(s)). The process of Claim 1

comprises a) applying a polyisocyanate component to fertilizer particles to form isocyanate coated fertilizer particles (P3, L28-30), b) mixing an inert organic filler with the isocyanate coated fertilizer (P3, L30 through P4, L1), c) adding an isocyanate-reactive component to the mixture of step b) (P4, L1-2) and d) allowing the reactive components to form filler containing polyurethane(urea) encapsulated fertilizer particles (P4, L2-3). Suitable inert fillers for step b) are insoluble or substantially insoluble in water and contain at least 50% by weight of particles having a particle size of less than 100 microns. (See P12, L28-30.) Suitable isocyanate-reactive components for step c) are selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from 31 to less than 100 and containing from 2 to 4 hydroxyl groups. (See P11, L24-25 and P12, L9-11.) In addition, the encapsulated fertilizer particles contain from 1 to 15% by weight of filled polyurethane(urea), based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to 30:70. (See P5, L8-12.)

Claim 7 is the second independent claim on appeal. Claim 7 is directed to a process for producing polyurethane(urea) encapsulated, slow release fertilizer particles. (See P1, L6-7 and P3, L23-24.) The process of Claim 7 comprises a) applying a polyisocyanate component to fertilizer particles to form isocyanate coated fertilizer particles (P4, L4-6), b) adding an isocyanate-reactive component to the coated fertilizer particles (P4, L6-7), c) mixing an inert organic filler with the mixture of step b) (P4, L7-8) and d) allowing the reactive components to form filler containing polyurethane(urea) encapsulated fertilizer particles (P4, L9-10). Suitable inert fillers for step c) are insoluble or substantially insoluble in water and contain at least 50% by weight of particles having a particle size of less than 100 microns. (See P12, L28-30.) Suitable isocyanate-reactive components for step b) are selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from 31 to less than 100 and containing from 2 to 4 hydroxyl groups. (See P11, L24-25 and P12, L9-11.) In addition, the encapsulated fertilizer particles contain from 1 to 15% by weight of filled polyurethane(urea), based

on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to 30:70. (See P5, L8-12.)

The third independent claim is Claim 13. Claim 13 is directed to a process for producing polyurethane(urea) encapsulated, slow release fertilizer particles. (See P1, L6-7 and P3, L23-24.) The process of Claim 13 comprises a) mixing fertilizer particles with an inert organic filler (P4, L11-12), b) applying a polyisocyanate component to the mixture of coated fertilizer particles and coated inert filler (P4, L12-14), c) adding an isocyanate-reactive component to the mixture of step b) (P4, L14-15) and d) allowing the reactive components to form filler containing polyurethane(urea) encapsulated fertilizer particles (P4, L15-16). Suitable inert fillers for step a) are insoluble or substantially insoluble in water and contain at least 50% by weight of particles having a particle size of less than 100 microns. (See P12, L28-30.) Suitable isocyanate-reactive components for step c) are selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from 31 to less than 100 and containing from 2 to 4 hydroxyl groups. (See P11, L24-25 and P12, L9-11.) In addition, the encapsulated fertilizer particles contain from 1 to 15% by weight of filled polyurethane(urea), based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to 30:70. (See P5, L8-12.)

Claim 19 is the fourth independent claim. Claim 19 is also directed to a process for producing polyurethane(urea) encapsulated, slow release fertilizer particles. (See P1, L6-7 and P3, L23-24.) The process of Claim 19 comprises a) applying an isocyanate-reactive component to fertilizer particles to form coated fertilizer particles (P4, L17-19), b) mixing an inert organic filler with the coated particles (P4, L19-20), c) adding a polyisocyanate component adding to the mixture of step b) (P4, L20-21) and d) allowing the reactive components to form filler containing polyurethane(urea) encapsulated fertilizer particles (P4, L21-22). Suitable inert fillers for step b) are insoluble or substantially insoluble in water and contain at least 50% by weight of particles having a particle size of less than 100 microns. (See P12, L28-30.) Suitable isocyanate-reactive components for step a) are selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a

molecular weight of from 105 to 400 and an equivalent weight of from 31 to less than 100 and containing from 2 to 4 hydroxyl groups. (See P11, L24-25 and P12, L9-11.) In addition, the encapsulated fertilizer particles contain from 1 to 15% by weight of filled polyurethane(urea), based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to 30:70. (See P5, L8-12.)

The fifth independent claim is Claim 25. Claim 25 is directed to a process for producing polyurethane(urea) encapsulated, slow release fertilizer particles. (See P1, L6-7 and P3, L23-24.) The process of Claim 25 comprises a) applying an isocyanate-reactive component to fertilizer particles to form coated fertilizer particles (P4, L23-25), b) adding a polyisocyanate component adding to the coated fertilizer (P4, L25), c) mixing an inert organic filler with the mixture from step b) (P4, L25-27) and d) allowing the reactive components to form filler containing polyurethane(urea) encapsulated fertilizer particles (P4, L27-29). Suitable inert fillers for step c) are insoluble or substantially insoluble in water and contain at least 50% by weight of particles having a particle size of less than 100 microns. (See P12, L28-30.) Suitable isocyanate-reactive components for step a) are selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from 31 to less than 100 and containing from 2 to 4 hydroxyl groups. (See P11, L24-25 and P12, L9-11.) In addition, the encapsulated fertilizer particles contain from 1 to 15% by weight of filled polyurethane(urea), based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to 30:70. (See P5, L8-12.)

Claim 31 is the last independent claim. Claim 31 is directed to a process for producing polyurethane(urea) encapsulated, slow release fertilizer particles. (See P1, L6-7 and P3, L23-24.) The process of Claim 31 comprises a) mixing fertilizer particles with an inert organic filler (P5, L1-2), b) applying an isocyanate-reactive component to the mixture to form a mixture of coated fertilizer particles and coated inert filler (P5, L2-4), c) adding a polyisocyanate component adding to the resultant mixture (P5, L4-5), and d) allowing the reactive components to form filler containing polyurethane(urea) encapsulated fertilizer particles (P5, L5-6). Suitable inert fillers for step a) are insoluble or substantially insoluble in water and contain at least 50%

by weight of particles having a particle size of less than 100 microns. (See P12, L28-30.) Suitable isocyanate-reactive components for step b) are selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from 31 to less than 100 and containing from 2 to 4 hydroxyl groups. (See P11, L24-25 and P12, L9-11.) In addition, the encapsulated fertilizer particles contain from 1 to 15% by weight of filled polyurethane(urea), based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to 30:70. (See P5, L8-12.)

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-5, 7-11, 13-17, 19-23, 25-29 and 31-35 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Wynnk et al reference (U.S. Published Patent Application 2004/0016276) in view of the Moore reference (U.S. Patent 4,804,403).

VII. ARGUMENTS

CLAIMS 1- 5, 7-11, 13-17, 29-23, 25-29 AND 31-35 WERE REJECTED UNDER 35 U.S.C. § 103(A) AS BEING UNPATENTABLE OVER THE WYNNK ET AL REFERENCE (U.S. PUBLISHED PATENT APPLICATION 2004/0016276) IN VIEW OF THE MOORE REFERENCE (U.S. PATENT 4,804,403).

Appellants respectfully submit that the presently claimed invention is not properly rejected as being obvious over this combination of references.

The various embodiments of the presently claimed invention clearly require that one of the three components (polyisocyanate, isocyanate-reactive component or inert inorganic filler) are applied to (or mixed with in the case of the inert inorganic filler) the fertilizer particles, followed by adding (or mixing) sequentially the remaining two components, and allowing the reactive components to filler containing polyurethane(urea) encapsulated fertilizer particles.

The controlled release fertilizer materials of the Wynnyk et al reference comprise a particulate plant nutrient surrounded by a protective coating. The protective coating comprises a particulate filler, and preferably, a release control coating beneath the protective coating to permit controlled release properties of the

fertilizer materials. The protective coating and the release control coating may be the same or different, with protective coatings of the polyurethane type being preferred. (See page 2, paragraph [0018] and paragraph [0020].) In these coatings, the particulate material(s) may be added to a polyol (e.g. castor oil, oleo polyol, etc.) or mixture of polyols, which this combination is then reacted with an isocyanate or mixture of isocyanates to produce the coating. These coatings are described as being less susceptible to damage during the mechanical handling of the fertilizer. (See page 2, paragraph [0020].)

Protective coatings of the Wynnk et al reference are preferably prepared from a mixture comprising a polyol, an isocyanate, a particulate filler and, optionally, an organic additive. This organic additive is physically intermixed with the urethane formed from the polyol and isocyanate to form a substantially homogeneous layer. Thus, the protective controlled release coating of this reference incorporates urethane, filler and organic additive into one substantially homogeneous layer. (See page 2, paragraph [0030].)

Appellants respectfully submit that although the Wynnk et al reference clearly discloses that separate layers are not formed by the process therein (see paragraphs [0030] and [0071]. It is Appellants' position that one skilled in the art would not combine the Wynnk et al reference in light of this disclosure with the Moore reference.

The Moore reference discloses attrition resistant controlled release fertilizers that comprise a water soluble central mass which contains releasable nitrogen or another plant nutrient, a base coat, and a water-insoluble coating (or sealing layer). The base coat is formed by a coupling agent which connects to the water soluble central mass, and the water-insoluble coat (or sealing layer) surrounds and chemically bonds to the base coat. This results in fertilizer particles which are highly resistant to attrition under conditions of vibration, impact and abrasion. See column 2, lines 48-65.

Suitable coupling agents for connecting to the water soluble central mass and forming the base coat include liquid polyfunctional isocyanates (column 2, lines 65-68; column 3, lines 12-13, 21-22, 57-64). The water-insoluble coating is prepared from an organic polyol or other material that can bond to the base coating (see column 3, lines 10-13, 32-37 and column 3, line 64 through column 4, line 5).

It is readily apparent that the Moore reference forms different or separate layers of components on the water soluble central mass. This is clearly the opposite of what is desired by the Wynnk et al reference. To the contrary, the Wynnk et al reference forms one substantially homogeneous layer. See paragraphs [0030] and [0070]. Appellants therefore submit that the skilled artisan would not combine the disclosures of these two references. Thus, any rejection of the presently claimed invention as being obvious under 35 U.S.C. § 103(a) in view of the Wynnk et al reference combined with the Moore reference is clearly improper.

Also, the inclusion of a diluent filler (i.e. a finely divided dry powder) in controlled release fertilizer particles of the Moore reference may result in an additional layer in the final product. See column 8, lines 22-35. These fillers may be blended with polyols and applied as a liquid dispersion to the base coat, applied between the base coat and the sealing layer, or applied between different sealing layers. Thus, the skilled artisan would still not be motivated to combine the Moore reference with the Wynnk et al reference, in spite of the fact that both disclose fillers can be used in prepared encapsulated fertilizer particles.

Therefore, the present claims are not properly rejected as being obvious under 35 U.S.C. 103(a) by this combination of references.

Appellants further submit that the Wynnk et al reference leads the skilled artisan that one can combine the various components therein in virtually any manner and apply to the plant nutrient material. See paragraphs [0020], [0030], [0070], [0071] and [0072]. This reference also describes that the "choice of polyol" is not particularly restricted and that castor oil is preferred (see paragraph [0047 and [0048]). Thus, the Wynnk et al reference discloses that virtually any polyol can be used and this can be combined in virtually any manner with the other required components (i.e. particulate filler and isocyanate) to form the homogeneous layer on the plant nutrient material.

The working examples of the present application clearly demonstrate that this is simply not true, particularly when using an isocyanate-reactive component as required by the present claims. Appellants' required isocyanate-reactive component is selected from the group consisting of (i) polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and (ii) compounds having a molecular weight of 105 to 400, an equivalent weight of 31 to less than 100 and

contain from 2 to 4 hydroxyl groups. Thus, castor oil which is the preferred polyol of the Wynnk et al reference is clearly excluded from the scope of the presently claimed invention.

All of the examples of the Wynnyk et al reference add the particulate filler to the polyol component and this mixture is applied simultaneously with the isocyanate component to the particulate plant nutrient (i.e. urea). Examples 1 and 2 of this reference are comparative examples which do not contain a particulate filler, and Examples 3-6 are representative of the invention described therein. Examples 3-6 each simultaneously coat urea fertilizer particles with (1) a mixture of a particulate filler (urea dust in Example 3, pea starch in Example 4, phosphogypsum in Example 5, and phosphate rock dust in Example 6) with castor oil, and optionally with a $C_{30+}$ alpha olefin wax (see Examples 4, 5 and 6), and (2) the isocyanate component. Example 3 which does not include the wax component first coats the urea particles with two layers of the wax in castor oil (see paragraphs [0099] and [0100]. Thus, one of ordinary skill in the art is led to conclude that the polyol component (with or without the organic additive such as the wax component) and the particulate filler are preferably pre-mixed before applying to the plant nutrient, either at the same time or a different time as the isocyanate component.

It is readily apparent that this process of first forming a mixture of the polyol component with the particulate filler is not suitable for the presently required isocyanate-reactive component. As previously stated, castor oil is outside the scope of the claimed isocyanate-reactive component. Appellants' working examples clearly demonstrate that the mixtures of the particulate filler with an isocyanate-reactive component as required by present claims are thick pastes and thus are not usable. This is also true of the mixtures of the particulate filler with an isocyanate component. Thick pastes such as these can not be applied to a particulate plant nutrient. See Examples 7, 11, 13 and 15 of the present application. This is true regardless of whether one attempts to first apply the mixture of filler and isocyanate-reactive component to the plant nutrient (see Examples 7, 13 and 15), or the mixture of filler and isocyanate to the plant nutrient (see Example 11).

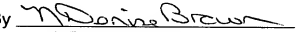
Appellants therefore submit that it is clearly not possible to simply substitute any isocyanate-reactive component (i.e. polyol, and specifically those required by the present claims) for the castor oil of the Wynnk et al reference and proceed in

applying to the particulate plant nutrient. To the contrary, Appellants have found that the presently required isocyanate-reactive components, particulate fillers and isocyanates must be applied as in one of the presently claimed embodiments. Each of these embodiments was found to be capable of producing encapsulated fertilizer particles which exhibited reduced release rates.

This combination of references does not fairly suggest the presently claimed invention to one of ordinary skill in the art.

In view of the preceding arguments, Appellants' respectfully submit that the Examiner's rejection is in error and respectfully request that this rejection be reversed. The allowance of Claims 1-5, 7-11, 13-17, 19-23, 25-29 and 31-35 is respectfully requested.

Respectfully submitted,

By 

N. Denise Brown
Agent for Appellants
Reg. No. 36,097

Bayer MaterialScience LLC
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-3804
FACSIMILE PHONE NUMBER:
(412) 777-3902
s:\shared\kgb\7925appealDB

VIII. CLAIMS APPENDIX:

The following is a listing of the claims on Appeal.

Claim 1. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:

a) applying a polyisocyanate component to fertilizer particles to form isocyanate coated fertilizer particles,

b) mixing an inert filler with said isocyanate coated fertilizer, wherein said inert, inorganic filler is insoluble or substantially insoluble in water and contains at least 50% by weight of particles having a particle size of less than 100 microns,

c) adding an isocyanate-reactive component to the mixture of step b), wherein said isocyanate-reactive component is selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from about 31 to less than about 100 and containing from 2 to 4 hydroxyl groups,

and

d) allowing the reactive components to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent by weight based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to about 30:70.

Claim 2. The process of Claim 1 wherein steps a), b), c) and d) are repeated (successively) as many times as necessary, with the polyurethane(urea) encapsulated fertilizer particles from the previous step d) being substituted for the fertilizer particles in step a), so as to form polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 % by weight of filled polyurethane(urea) based on the total weight of the encapsulated fertilizer.

Claim 3. The process of Claim 1, wherein said filler containing polyurethane(urea) encapsulated fertilizer particles contain from about 4 to about 12% by weight of filled polyurethane(urea).

Claim 4. The process of Claim 1, wherein said ratio is from about 80:30 to about 30:70.

Claim 5. The process of Claim 4, wherein said ratio is from about 60:40 to about 40:60.

Claim 7. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:

a) applying a polyisocyanate component to fertilizer particles to form coated fertilizer particles,

b) adding an isocyanate-reactive component to said coated fertilizer particles, wherein said isocyanate-reactive component is selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from about 31 to less than about 100 and containing from 2 to 4 hydroxyl groups,

c) mixing an inert inorganic filler with the mixture of step b) before the isocyanate and isocyanate-reactive component react, wherein said inert, inorganic filler is insoluble or substantially insoluble in water and contains at least 50% by weight of particles having a particle size of less than 100 microns,

and

d) allowing the reactive components to react to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent by weight based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to about 30:70.

Claim 8. The process of Claim 7 wherein steps a), b), c) and d) are repeated (successively) as many times as necessary, with the polyurethane(urea) encapsulated fertilizer particles from the previous step d) being substituted for the fertilizer particles in step a), so as to form polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 % by weight of filled polyurethane(urea) based on the total weight of the encapsulated fertilizer.

Claim 9. The process of Claim 7, wherein said filler containing polyurethane(urea) encapsulated fertilizer particles contain from about 4 to about 12% by weight of filled polyurethane(urea).

Claim 10. The process of Claim 7, wherein said ratio is from about 80:30 to about 30:70.

Claim 11. The process of Claim 10, wherein said ratio is from about 60:40 to about 40:60.

Claim 13. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:

a) mixing fertilizer particles with an inert inorganic filler, wherein said inert, inorganic filler is insoluble or substantially insoluble in water and contains at least 50% by weight of particles having a particle size of less than 100 microns,

b) applying a polyisocyanate component to the mixture to form a mixture of coated fertilizer particles and coated inert filler,

c) adding an isocyanate-reactive component to the resultant mixture, wherein said isocyanate-reactive component is selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from about 31 to less than about 100 and containing from 2 to 4 hydroxyl groups,

and

d) allowing the reactive components to react to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent by weight based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to about 30:70.

Claim 14. The process of Claim 13 wherein steps a), b), c) and d) are repeated (successively) as many times as necessary, with the polyurethane(urea) encapsulated fertilizer particles from the previous step d) being substituted for the fertilizer particles in step a), so as to form polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 % by weight of filled polyurethane(urea) based on the total weight of the encapsulated fertilizer.

Claim 15. The process of Claim 13, wherein said filler containing polyurethane(urea) encapsulated fertilizer particles contain from about 4 to about 12% by weight of filled polyurethane(urea).

Claim 16. The process of Claim 13, wherein said ratio is from about 80:30 to about 30:70.

Claim 17. The process of Claim 16, wherein said ratio is from about 60:40 to about 40:60.

Claim 19. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:

a) applying an isocyanate reactive component to fertilizer particles to form coated fertilizer particles, wherein said isocyanate-reactive component is selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from about 31 to less than about 100 and containing from 2 to 4 hydroxyl groups,

b) mixing an inert inorganic filler with said coated fertilizer particles, wherein said inert, inorganic filler is insoluble or substantially insoluble in water and contains at least 50% by weight of particles having a particle size of less than 100 microns,

c) adding a polyisocyanate component to the mixture of step b) and

d) allowing the reactive components to react to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent by weight based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to about 30:70.

Claim 20. The process of Claim 19 wherein steps a), b), c) and d) are repeated (successively) as many times as necessary, with the polyurethane(urea) encapsulated fertilizer particles from the previous step d) being substituted for the fertilizer particles in step a), so as to form polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 % by weight of filled polyurethane(urea) based on the total weight of the encapsulated fertilizer.

Claim 21. The process of Claim 19, wherein said filler containing polyurethane(urea) encapsulated fertilizer particles contain from about 4 to about 12% by weight of filled polyurethane(urea).

Claim 22. The process of Claim 19, wherein said ratio is from about 80:30 to about 30:70.

Claim 23. The process of Claim 22, wherein said ratio is from about 60:40 to about 40:60.

Claim 25. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:

a) applying an isocyanate reactive component to fertilizer particles to form coated fertilizer particles, wherein said isocyanate-reactive component is

selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from about 31 to less than about 100 and containing from 2 to 4 hydroxyl groups,

b) adding a polyisocyanate to said coated fertilizer,

c) mixing an inert inorganic filler with the mixture of step b) before the isocyanate and isocyanate-reactive component react, wherein said inert, inorganic filler is insoluble or substantially insoluble in water and contains at least 50% by weight of particles having a particle size of less than 100 microns,

and

d) allowing the reactive components to react to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent by weight based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to about 30:70.

Claim 26. The process of Claim 25 wherein steps a), b), c) and d) are repeated (successively) as many times as necessary, with the polyurethane(urea) encapsulated fertilizer particles from the previous step d) being substituted for the fertilizer particles in step a), so as to form polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 % by weight of filled polyurethane(urea) based on the total weight of the encapsulated fertilizer.

Claim 27. The process of Claim 25, wherein said filler containing polyurethane(urea) encapsulated fertilizer particles contain from about 4 to about 12% by weight of filled polyurethane(urea).

Claim 28. The process of Claim 25, wherein said ratio is from about 80:30 to about 30:70.

Claim 29. The process of Claim 28, wherein said ratio is from about 60:40 to about 40:60.

Claim 31. A process for producing polyurethane(urea) encapsulated, slow release fertilizer particles comprising:

a) mixing fertilizer particles with an inert inorganic filler, wherein said inert, inorganic filler is insoluble or substantially insoluble in water and contains at least 50% by weight of particles having a particle size of less than 100 microns,

b) applying an isocyanate reactive component to the mixture to form a mixture of coated fertilizer particles and coated inert filler, wherein said isocyanate-reactive component is selected from the group consisting of polyether polyols having an equivalent weight of less than 200 and a functionality of 2 to 8 and compounds having a molecular weight of from 105 to 400 and an equivalent weight of from about 31 to less than about 100 and containing from 2 to 4 hydroxyl groups,

c) adding a polyisocyanate component to the resultant mixture and

d) allowing the reactive components to react to form filler containing polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 percent by weight of filled polyurethane(urea), said percent by weight based on the total weight of the encapsulated fertilizer, with the proviso that the weight ratio of polyurethane(urea) to filler is from about 80:20 to about 30:70.

Claim 32. The process of Claim 31 wherein steps a), b), c) and d) are repeated (successively) as many times as necessary, with the polyurethane(urea) encapsulated fertilizer particles from the previous step d) being substituted for the fertilizer particles in step a), so as to form polyurethane(urea) encapsulated fertilizer particles containing from about 1 to about 15 % by weight of filled polyurethane(urea) based on the total weight of the encapsulated fertilizer.

Claim 33. The process of Claim 31, wherein said filler containing polyurethane(urea) encapsulated fertilizer particles contain from about 4 to about 12% by weight of filled polyurethane(urea).

Claim 34. The process of Claim 31, wherein said ratio is from about 80:30 to about 30:70.

Claim 35. The process of Claim 34, wherein said ratio is from about 60:40 to about 40:60.

## IX. EVIDENCE APPENDIX:

No evidence has been submitted by Appellants.

X. RELATED PROCEEDINGS APPENDIX:

Appellants' have not identified any applications under Section II, titled "RELATED APPEALS AND INTERFERENCES". Accordingly, there is nothing to submit under this section.